AMENDMENTS TO THE CLAIMS:

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1. (currently amended) A method of predicting an initial value of an analyte in a sample, said method comprising the steps of:

making a plurality of observations on a plurality of samples, wherein each observation includes a plurality of variables associated with said samples,

generating an equation which approximates said plurality of observations,

measuring a sample analyte value after storing said sample for a known non-zero time, said sample having associated therewith a container type, a storage time, and a storage temperature,

inputting said container type, said storage time, said storage temperature, and said analyte value into said equation, and

solving said equation to obtain an estimated initial analyte value.

2. (original) The method of claim 1, further comprising the step of solving said equation for initial analyte value as a function of container type, storage time, and storage temperature.

3. (original) The method of claim 1, wherein said sample is a blood sample.

4. (original) The method of claim 1, wherein the plurality of variables associated with said sample comprises an actual initial analyte level, an actual subsequent analyte level, a time since the sample was taken, and a temperature at which said sample was stored.

5. (original) The method of claim 1, wherein the plurality of variables associated with said sample comprises an actual initial analyte level, an actual subsequent analyte level, a time since the sample was taken, and a type of container in which said sample was stored.

6. (original) The method of claim 1, wherein the plurality of variables associated with said sample comprises an actual initial analyte level, an actual subsequent

analyte level, a temperature at which the sample was stored, and a type of container in which said sample was stored.

7. (original) The method of claim 1, wherein the plurality of variables associated with said sample comprises an actual initial analyte level, an actual subsequent analyte level, a time since the sample was taken, a temperature at which said sample was stored, and a type of container in which said sample was stored.

8. (currently amended) A method of predicting an initial value of an analyte in a sample, said method comprising the steps of:

determining a level of an analyte in a sample <u>after storing said sample for a known non-zero time</u>, said sample having associated therewith at least one factor selected from the group consisting of a container type, a storage time, and a storage temperature,

inputting said at least one factor and said analyte level into an equation, and

solving said equation to obtain an estimated initial analyte value.

9. (original) The method of claim 8, wherein said equation represents analyte level as a function of storage time.

10. (original) The method of claim 8, wherein said equation represents analyte level as a function of storage temperature.

11. (original) The method of claim 8, wherein said equation represents analyte level as a function of container type.

12. (original) The method of claim 8, wherein said equation represents analyte level as a function of storage temperature and storage time.

13. (original) The method of claim 8, wherein said equation represents analyte level as a function of storage temperature and container type.

14. (original) The method of claim 8, wherein said equation represents analyte level as a function of storage time and container type.

15. (original) The method of claim 8, wherein said equation represents analyte level as a function of storage temperature, storage time, and container type.

16. (original) The method of claim 8, wherein said sample is a blood sample.

17. (currently amended) A system for estimating an initial value of an analyte in a sample, said system comprising:

an analyzer adapted to analyze the actual level of an analyte in a sample, said sample having been stored for a known non-zero time,

an estimator adapted to estimate said initial ~~level~~ value of said analyte based on a plurality of ~~values~~ variables, said ~~values~~ variables including said actual level of said analyte, a storage time, a storage temperature, and a container type, and

an output adapted to present said estimated initial value.

18. (original) The system of claim 17, wherein said estimator estimates said initial level using an equation associated with said analyte, said equation adapted to solve for initial analyte level as a function of actual analyte level, storage time, storage temperature, and container type.

19. (currently amended) ~~The system of claim 18,~~ A system for estimating an initial value of an analyte in a sample, said system comprising:

an analyzer adapted to analyze the actual level of an analyte in a sample,

an estimator adapted to estimate said initial value of said analyte based on a plurality of variables, said variables including said actual level of said analyte, a storage time, a storage temperature, and a container type, and

an output adapted to present said estimated initial value;

wherein said estimator estimates said initial level using an equation associated with said analyte, said equation adapted to solve for initial analyte level as a function of actual analyte level, storage time, storage temperature, and container type; and

wherein said equation contains a quadratic term for time, a quadratic term for temperature, and a mixed term for time and temperature.

20. (original) The system of claim 17, wherein said sample is a blood sample.

21. (currently amended) A method of generating a predictive model for predicting the initial value of an analyte in a sample, the method comprising the steps of:

collecting a plurality of samples,

testing each sample for an initial value of an analyte,

storing at least one sample at a known storage temperature for a known non-zero time,

testing each sample for a subsequent value of said analyte after a known time interval,

analyzing data based on said tests using polynomial regression analysis, and

generating a predictive model based on said analysis.

22. (original) The method of claim 21, further comprising the steps of:

validating the predictive model by comparing the true initial values to a set of model predicted values.

23. (currently amended) The method of claim 22, wherein the step of validating further includes:

accepting the model ~~of~~ if the set of model predicted values is more accurate than the set of subsequent values.

24. (original) The method of claim 21 wherein said sample is a blood sample.

25. (currently amended) ~~The method of claim 21,~~ A method of generating a predictive model for predicting the initial value of an analyte in a sample, the method comprising the steps of:

collecting a plurality of samples,

testing each sample for an initial value of an analyte,

storing at least one sample at a known storage temperature,

testing each sample for a subsequent value of said analyte after a known time interval,

analyzing data based on said tests using polynomial regression analysis, and

generating a predictive model based on said analysis;

wherein the step of storing at least one sample further comprises storing said samples at a plurality of known temperatures.

26. (currently amended) A computer-readable medium of instructions, adapted to control a system to generate a predicted initial analyte value, comprising:

a first set of instructions, adapted to control said system to collect a plurality of data associated with a sample after said sample is stored for a known non-zero time, said data comprising an actual analyte value, and at least one factor selected from the group consisting of a time of storage, a temperature of storage, and a container type;

a second set of instructions, adapted to control said system to apply said data to a predictive model and to calculate an estimated initial analyte value; and

a third set of instructions, adapted to control said system to output said estimated initial analyte value.

27. (original) A computer-readable medium of instructions as in claim 26, further adapted to generate said predictive model, and further comprising:

a fourth set of instructions, adapted to control said system to collect a plurality of data associated with a known set of samples, said known samples each having data associated therewith comprising an actual initial analyte value, an actual

subsequent analyte value, and at least one factor from the group consisting of a time of storage, a temperature of storage, and a container type;

a fifth set of instructions, adapted to control said system to generate said predictive model from said data associated with said known set of samples.

28. (original) A computer-readable medium of instructions as in claim 27, further comprising a sixth set of instructions, adapted to control said system to validate the predictive model by comparing the true initial values to a set of model predicted values.

29. (original) A computer-readable medium of instructions as in claim 28, further comprising a seventh set of instructions, adapted to control said system so accept the model if the set of model predicted values is more accurate than the set of subsequent values.

30. (original) A computer-readable medium of instructions as in claim 29, wherein the sample is a blood sample.